

24/25



BIO DIESEL NUTRIENTS GROWERS GUIDE

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PROPAGATION (LIGHTS 20HRS ON / 4HRS OFF)

Cuttings and Seedlings require only small levels of nutrients but benefit greatly by ensuring the correct pH (6.0) is maintained to promote early root establishment.

HOW TO MIX YOUR NUTRIENTS The values in this feed chart represent the recommended number of millilitres (mls) of each concentrate to add to each litre of water - simply multiply the value shown by the number of litres of feed you are mixing. Always start with part A then part B of Green Diamond and then add the other nutrients you are using - this will reduce foaming during mixing.

PROPAGATION STAGE	WK1	WK2	WK3
GREEN DIAMOND A&B	1.0	1.0	1.0
SUPERNATURAL	0.5	0.5	0.5
ALOEVATE	2.0	2.0	2.0
PH TARGET	6.0	6.0	6.0

*Use Mykos Mycorrhizae Fungi when transplanting into larger pots.

VEGETATIVE GROWTH WEEKLY FEED GUIDE (LIGHTS 18HRS ON / 6HRS OFF)

Once your plants are transplanted you are ready to start vegetative growth. Pay special attention to temperatures and humidity at this stage and ensure the correct lighting levels. Pre Soak Coco fibre before transplant with WK1 Feed program.

GROWTH STAGE	WK1	WK2	WK3	WK4	WK5
GREEN DIAMOND A&B	2.0	2.0	3.0	3.0	3.0
SUPERNATURAL	0.5	0.5	0.5	1.0	1.0
ALOEVATE	2.0	2.0	5.0	5.0	5.0
MARINE CAMG+	0.25	0.25	0.5	0.5	1.0
BIO ONE	1.0	1.0	1.0	1.0	1.0
PH	5.8-6.2	5.8-6.2	5.8-6.2	5.8-6.2	5.8-6.2
EC	1.2	1.2	1.8	1.8	2.2

*Some varieties may require either more or less **Marine CaMg+**. Do not feed to slow growing or stunted young plants.
*EC strength may vary depending on water source, adjust with fresh water to reach the target EC.

*If adjusting pH we recommend using Potassium Silicate for pH up. Citric acid or Phosphoric acid can be used as pH down. Phosphoric has better longevity for nutrient tanks.

A HEAVY FRESH WATER FEED ONCE PER WEEK HELPS RESET AND CLEARS ANY UNUSED NUTRIENTS

FOLIAR SPRAYS

By Foliar Spraying you are applying nutrients directly through the leaves. This accelerates growth rates and ensures complete full spectrum mineral uptake despite nutrient pH. This is the fastest and most efficient way to correct nutrient deficiencies. For fast growth rates foliar spray plants during lights off twice per week.

FOLIAR SPRAYS ARE HIGHLY RECCOMENDED DURING VEGETATIVE GROWTH

GROWTH STAGE	WK1	WK2-4	WK4+
GREEN DIAMOND A+B	1.0	1.0	2.0
SUPERNATURAL	0.5	0.5	0.5
ALOEVATE	5.0	5.0	5.0
MARINE CAMG+	-	0.25	0.5

*Foliar Spray Marine CaMg+ at 0.5ml/L if your plants are pale and need a "Green up" or to quickly adjust Calcium deficiencies.

*Apply Foliar sprays under low lighting levels in Vegetative growth stage only.



FRUITING & FLOWERING STAGE WEEKLY FEED GUIDE (LIGHTS 12HRS ON/ 12HRS OFF)

During the first 3 weeks of flowering your plants will go through a process called “internodal stretching,” increasing in size just before they start to form small buds. When the stretching stops (typically around the end of week 3), you should remove any weak lower lateral branches and large fan leaves that are covering new growth. This will allow better light penetration through the canopy, improve airflow and lead to increased yields. This is a good time to add or reset your flowering netting to support the increasing weight.

AUTO FLOWERING PLANTS

Auto flowering seeds will generally “Auto Flower” after 3 weeks of Vegetative growth. After 3 weeks in growth stage switch lights to 12/12 and start the Bio Diesel Flowering chart.

FLOWERING -BLOOM	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9
GREEN DIAMOND A&B	3.0	3.0	3.0	4.0	3.0	3.0	3.0	W	W
SUPERNATURAL	1.0	1.0	1.0	1.0	1.0	1.0		A	A
ALOEVATE	5.0	5.0	5.0	5.0	5.0	5.0		T	T
BIO ONE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E
BIO DIESEL	2.0	2.0	2.0	4.0	4.0	4.0		R	R
RHINO K	1.0				1.0	1.0	2.0		
*RHINO PK POWDER					1.0g	1.0g	2.0g		
PH	5.8-6.2	5.8-6.2	5.8-6.2	5.8-6.2	6.0-6.2	6.0-6.2	6.0-6.2		
EC	2.0	1.8	1.8	2.1	2.2 *2.4	2.2 *2.4	2.6 *3.0		
CRYSTAL CLEAR FLUSH		5.0		5.0		5.0		5.0	

USE EITHER RHINO K OR RHINO PK POWDER - DO NOT USE BOTH COMBINED

*Rhino PK powder is tank stable and should be used as a single tank application at the start of each week combined with the rest of the program. If hand watering solution apply twice each week 5, 6 & 7 combined with our other nutrients on the chart. Organic Rhino K liquid should be mixed on the day of application.

*Some varieties and different plant sizes may prefer higher or lower EC levels.

*Do not adjust the pH when using Crystal Clear unless your media pH is low. Ensure the next feed goes through at the correct 5.8-6.2pH range.

*If the media pH is low use fresh water for mid-cycle flushing.

PRO TIPS

HIGH PRODUCTION CO2

Many of the commercial farms and advanced growers use Co2 in the grow environment. EC Values can be run 10-25% stronger for most strain varieties. For Co2 levels above 1000PPM increase Green Diamond strength through all stages. I.e 2ml = 2.5ml 3ml=6ml 4ml = 6ml per L to create a higher base EC strength for larger plants. Ensure a minimum runoff amount of 10-20% when running higher ECs.

WATERING TIPS AND DRY BACKS

Ensure not to overwater after initial transplant. Allow coco fibre to dryback to around 30% moisture content before next watering. A healthy plant should use approximately 5% water per coco volume in the early stages then 7.5% - 10% based on pot size. I.e. 2L water per 20L of coco = 10% water volume.

PRO TIP - Larger Dry backs during the final week of flush can positively stress the plant creating a more resinous quality result with a stronger aroma and flavour.

TANK AND PLUMBING MAINTENANCE

Micronized Organics like Bio Diesel and Supernatural can create unharmed bio films that settle in the bottom or against the sides of your nutrient tank. Between tank fills simply wipe out the tank with a damp cloth or peroxide solution like Bio Clear. Between Cycles you should flush your plumbing lines with a peroxide solution like Bio Clear. To avoid any buildups and sterilise ready for the next crop.

FLUSHING AND FINISHING

Crystal Clear can be used as both a Maintenance flush and as a final flush before harvest. Do not adjust the pH of the solution and ensure plenty of runoff. It will lower the pH of rising growing media while also clearing it of unused salts. Always add a complete nutrient feed the following day after using crystal clear at the correct pH range. **When using aggressive feed programs it is a good idea to flush fresh water through the pots once per week or between tanks to prevent any unused fertiliser buildups.**



ESSENTIAL CLIMATE ADVICE FOR CONTROLLED ENVIRONMENTS WITH LED

In order for your plants to process nutrients efficiently your climate parameters and light levels need to be correct. The below chart was developed using exhaustive farm testing and the latest up to date resources from industry leaders.

To maintain correct temperatures and humidity levels indoor growers will need to use simple climate devices like a heater, Dehumidifier and Humidifier. The use of a PPFD light meter and VPD meter are also highly recommended.

FOR LED GROWN CROPS WE SEE HIGHER YIELDS AT WARMER TEMPERATURES

PLANT STAGE	LIGHT INTENSITY PPFD (UMOL)		TEMPERATURE CELSIUS	RELATIVE HUMIDITY	TARGET VPD	CO2 INJECTION PPM LEVEL
	NO CO2	SUPP CO2				
SEEDLINGS & CUTTINGS Weeks 1-3	NO CO2 >100	SUPP CO2 >100	21 - 25 C	70% - 80%	0.4 - 0.6	450 PPM
VEGETATIVE Weeks 1-4	300	400	25 - 28 C	60% - 70%	0.8 - 1.0	600 PPM
VEGETATIVE Weeks 5-8	400	600	25 - 30 C	60% - 70%	0.8 - 1.0	900 PPM
FLOWERING Weeks 1-3	600	900	25 - 30 C	50% - 60%	1.0 - 1.2	1400 PPM
FLOWERING Weeks 4-7	700	1100	25 - 30 C	50% - 60%	1.2 - 1.5	1400 PPM
FLOWERING Weeks 8-9	700	1100	25 - 30 C	40% - 50%	1.2 - 1.5	700 PPM
NOTES: Use these climate tips to ensure you create the best environment possible for growth rates and yield increases.	<p>Values above 900 PPFD will require co2 injection or can negatively affect growth.</p> <p>Purchase a light meter that measures in PPFD (Umol) You can download a free version on your smart phone.</p> <p>Growers should use a PPFD light meter to measure LED intensity at the canopy. If LEDs are too intense you may experience slow growth and bleaching.</p>	<p>Warmer or Cooler climates require different humidity levels (R/H) to maintain the correct VPD ranges for optimal plant growth.</p> <p>LED grown plants benefit greatly from warmer temperatures and correct humidity levels to activate higher transpiration rates.</p> <p>Leaf Temperatures should ideally be no colder than -1 of your room temp to encourage osmotic pressure and transpiration.</p>	<p>If your room is outside these values consult a VPD chart to ensure your RH and Temp creates a correct VPD for plant growth.</p> <p>During Ripening lower RH to prevent Botrytis (Bud Rot)</p> <p>The use of Heaters, Humidifiers and Dehumidifiers are recommended to control temps and humidity levels.</p>	<p>Calculated at -1C leaf surface temp offset.</p> <p>Try a VPD meter for constant monitoring of temps and humidity ranges.</p> <p>If your VPD is too low you will experience poor nutrient uptake and mobility leading to yellowing and poor growth rates.</p>	<p>When using Co2 run the higher temps and lighting PPFD figures in the chart.</p> <p>Co2 is reduced at ripening to lower RH to avoid botrytis.</p> <p>use a quality Co2 Controller for dosing levels and fan control.</p>	



FOR FURTHER RESOURCES OR A CUSTOM DESIGNED FEED CHART CONTACT US ONLINE AT:
www.biodieselnutrients.com.au or on Instagram @biodiesel_growsupport